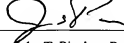


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John T. Pienkos, Reg. No. 42,997

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): David Charles Schwartz, *et al.*
Serial No.: 10/688,416
Filed: October 17, 2003
For: Micro-Channel Long Molecule Manipulation System
Docket No.: 960296.00129

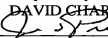
INFORMATION DISCLOSURE STATEMENT

This paper is being presented for filing in the above case pursuant to Rules 97 and 98 of the Rules of Practice.

Four sets of Forms PTO/SB/08A "Information Disclosure Statement by Applicant" are attached. The first set of Forms PTO/SB/08A lists newly-cited references, and copies of the references are enclosed.

As for the remaining three sets of Forms PTO/SB/08A, these respectively list references that were cited during the prosecution of three patent applications of which the present Application claims the benefit, namely, U.S. patent application Nos. 09/962,802 (now U.S. Patent No. 6,610,256); 08/855,410 (now U.S. Patent No. 6,294,136); and 08/415,710 (now U.S. Patent No. 5,720,928). The Applicants respectfully submit that, pursuant to 37 CFR 1.98(d), no copies of the references listed on these Forms PTO/SB/08A need be submitted to the Patent Office.

No additional fees for filing this paper are believed to be due. However, the Commissioner is hereby authorized to charge any additional fees due or to credit any overpayment to deposit account no. 17-0055.

Respectfully submitted,
DAVID CHARLES SCHWARTZ, *et al.*
By: 
John T. Pienkos
Reg. No. 42,997
Attorney for Applicant
Quarles & Brady LLP
411 E. Wisconsin Avenue
Milwaukee WI 53202-4497
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

Complete if Known

Application Number	10/688,416
Filing Date	October 17, 2003
First Named Inventor	David Charles Schwartz
Art Unit	
Examiner Name	
Attorney Docket Number	960296.00129

OTHER PRIOR ART--NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/SKM/		Chih-Ming Ho, "Fluidics - The Link Between Micro and Nano Sciences and Technologies", Proceedings of the IEEE 14th Annual International Conference On Microelectro Mechanical Systems, MEMS 2001, Interlaken, Switzerland, Jan 21-25.	
/SKM/		2001, IEEE International Micro Electro Mechanical Systems Conference, New York, NY: IEEE, US, vol. CONF. 14, (01-21-2001), pgs 375-384, XP010534628 ISBN: 0-7803-5998-4, pg 378-379.	
/SKM/		Unger M A Et Al: "Monolithic Microfabricated Valves and Pumps by Multilayer Soft Lithography", Science, American Association For The Advancement Of Science, US, vol. 288, 04/07/2000, pgs. 113-116, XP002192277 ISSN: 0036-8075 Figure 1.	
/SKM/		Stix, Gary; "Thinking Big-A Harvard Medical School dropout aims to usher in the personal-genomics era," Innovations, Scientific American, June 2002, pgs. 30-31.	
/SKM/		Stikeman, Alexandra, "Nanobiotech Makes The Diagnosis," Technology Review, May 2002, pgs. 61-66.	

Examiner Signature	/Stephanie Mummert/ (05/29/2007)	Date Considered	05/29/2007
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1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Prior art cited in U.S. Patent No. 6,610,256

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 7

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Application Number	10/688,416
Filing Date	October 17, 2003
First Named Inventor	David Charles Schwartz
Art Unit	
Examiner Name	
Attorney Docket Number	960296.00129

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/SKM/		US- 4,473,452	Sep., 1984	Cantor et al.	
		US- 4,695,548	Sep., 1987	Cantor et al.	
		US- 4,737,251	Apr., 1988	Carle et al.	
		US- 4,767,700	Aug., 1988	Wallace	
		US- 4,870,004	Sep., 1989	Conroy et al.	
		US- 5,059,294	Oct., 1991	Lizardi	
		US- 5,079,169	Jan., 1992	Chu et al.	
		US- 5,314,829	May, 1994	Coles	
		US- 5,380,833	Jan., 1995	Urdea	
		US- 5,405,519	Apr., 1995	Schwartz	
		US- 5,599,664	Feb. 1997	Schwartz	
		US- 5,720,928	Feb., 1998	Schwarzat	422/186
		US- 5,985,549	Nov., 1999	Singer et al.	435/6
		US- 6,147,198	Nov., 2000	Schwartz	
		US- 6,150,089	Nov., 2000	Schwartz	
		US- 6,294,136	Sep., 2001	Schwartz	422/186
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	
/SKM/		FR 2605472	Apr., 1988	Alain Bouillet		
		WO 84/02001	May, 1984	Trustees of Columbia University		
		WO 87/01955	Sep., 1987	Washington University		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 7

Application Number 10/688,416
Filing Date October 17, 2003
First Named Inventor David Charles Schwartz
Art Unit
Examiner Name
Attorney Docket Number 960296.00129

OTHER PRIOR ART—NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.†	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/SKM/		Allison et al., 1992, "Immobilization of DNA for Scanning Probe Microscopy", Proc. Natl. Acad. Sci. USA 89: 10129-10133.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/668,416
		Filing Date	October 17, 2003
		First Named Inventor	David Charles Schwartz
		Group Art Unit	
		Examiner Name	
Sheet	3	of	7
		Attorney Docket Number	960296.00129

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/SKM/		Chumakov et al., 1992, "Continuum of Overlapping Clones Spanning the Entire Human Chromosome 21q", Nature 359: 380-387.	
		Church and Gilbert, 1984, "Genomic Sequencing", Proc. Natl. Acad. Sci. USA 81: 1991-1995.	
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		Guo et al., 1993, "Sizing of Large DNA Molecules by Hook Formation in a Loose Matrix", J. Biomol. Struct. and Dynam. 11: 1-10.	
		Guo et al., 1992, "Sizing Single DNA Molecules", Nature 359: 783-784.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/668,416
		Filing Date	October 17, 2003
		First Named Inventor	David Charles Schwartz
		Group Art Unit	
		Examiner Name	
Sheet 4	of 7	Attorney Docket Number	960296.00129

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
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/SKM/		Gurrieri et al., 1990, "Imaging of Kinked Configurations of DNA Molecules Undergoing Orthogonal Field Alternating Gel Electrophoresis by Fluorescence Microscopy", Biochemistry 2: 3396-3401.	
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		Lichter et al., 1990, 1990, "High-Resolution Mapping of Human Chromosome 11 by in Situ Hybridization with Cosmid Clones", Science 247: 64-69.	

Examiner Signature	/Stephanie Mummert/ (05/29/2007)	Date Considered	05/29/2007
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 5 of 7

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Application Number 10/668,416
Filing Date October 17, 2003
First Named Inventor David Charles Schwartz
Group Art Unit
Examiner Name
Attorney Docket Number 960296.00129

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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/SKM/		Link and Olson, 1991, "Physical Map of the <i>Saccharomyces cerevisiae</i> Genome at 110-Kilobase Resolution", Genetics 127: 681-698.	
		Lodish et al., 1995, Molecular Cell Biology. W.H. Freeman, NY, p. 345.	
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Examiner Signature	/Stephanie Mummert/ (05/29/2007)	Date Considered	05/29/2007
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 6 of 7

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Application Number	10/688,416
Filing Date	October 17, 2003
First Named Inventor	David Charles Schwartz
Group Art Unit	
Examiner Name	
Attorney Docket Number	960296.00129

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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/SKM/		Poddar and Maniloff, 1986, "Chromosome Analysis by Two-Dimensional Fingerprinting", Gene 49:93-102.	
		Porath and Axen, 1976, "Immobilization of Enzymes to Agar, Agarose, and Sephadex Supports; Meth. Enzymol. 44:19-45	
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Examiner Signature	/Stephanie Mummert/ (05/29/2007)	Date Considered	05/29/2007
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		Filing Date	October 17, 2003
		First Named Inventor	David Charles Schwartz
		Group Art Unit	
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Sheet 7	of 7	Attorney Docket Number	960296.00129

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Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ¹
/SKM/		Southern, 1975, "Detection of Specific Sequences among DNA Fragments Separated by Gel Electrophoresis", J. Mol. Biol. 98:503-517.	
		Stallings et al., 1990, "Physical Mapping of Human Chromosomes by Repetitive Sequence Fingerprinting", Proc. Natl. Acad. Sci. USA 87:6218-6222.	
		Stellwagen, 1988, "Effect of Pulsed and Reversing Electric Fields on the Orientation of Linear and Supercoiled DNA Molecules in Agarose Gels", Biochemistry 27:6417-6424.	
		Stellwagen, N.C., 1985, "Orientation of DNA Molecules in Agarose Gels by Pulsed Electric Fields", J. Biomo. Str. and Dynam. 3:299-314.	
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		van den Engh et al., 1992, "Estimating Genomic Distance from DNA Sequence Location in Cell Nuclei by a Random Walk Model", Science 257:1410-1412.	
		Williams, 1977, "Use of Polylysine for Adsorption of Nucleic Acids and Enzymes to Electron Microscope Specimen Films", Proc. Natl. Acad. Sci. USA 74:2311-2315.	
		Woolf et al., 1988, "Mapping Genomic Organization by Field Inversion and Two Dimensional Gel Electrophoresis", Nucl. Acids. Res. 16:3863-3875.	
		Yanagida et al., 1983, "Dynamic Behaviors of DNA Molecules in Solution..." Cold Spring Harbor Symp. Quant. Biol. 47:177-187.	
		Zenhausen et al., 1992, "Imaging of DNA by Scanning Force Microscopy", J. Struct. Biol. 108:69-73.	
↓		Zubay, 1988, Biochemistry (Macmillan Publishing Company, New York) pp. 918-919.	

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5530986

Prior Art Cited to U.S. Patent No. 6,294,136

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Sheet 1 of 8

Application Number 10/888,416
Filing Date October 17, 2003
First Named Inventor David Charles Schwartz
Art Unit
Examiner Name
Attorney Docket Number 960296.00129

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 4,473,452	Sep., 1984	Cantor et al.	204/180
		US- 4,695,548	Sep., 1987	Cantor et al.	435/179
		US- 4,737,251	Apr., 1988	Carle et al.	204/182
		US- 4,767,700	Aug., 1988	Wallace	435/6
		US- 4,870,004	Sep., 1989	Conroy et al.	435/6
		US- 5,059,294	Oct., 1991	Lizardi	204/458
		US- 5,079,169	Jan., 1992	Chu et al.	436/174
		US- 5,314,829	May, 1994	Coles	436/165
		US- 5,380,833	Jan., 1995	Urdea	536/22
		US- 5,720,928	Feb., 1998	Schwartz	422/186
		US- 5,985,549	Nov., 1999	Singer et al.	435/6
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FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ² Number ³ Kind Code ⁴ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		FR 2605472	Apr., 1988	Alain Boullier	
		WO 84/02001	May, 1984	Trustees of Columbia University	
		WO 87/01955	Sep., 1987	Washington University	

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Application Number	10/688,416
Filing Date	October 17, 2003
First Named Inventor	David Charles Schwartz
Art Unit	
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		Allison et al., 1999, "Immobilization of DNA for Scanning Probe Microscopy", Proc. Natl. Acad. Sci. USA 89: 10129-10133.	
		Barlow and Lehrach, 1987, "Genetics by Gel Electrophoresis: The Impact of Pulsed Field Gel Electrophoresis on Mammalian Genetics", Trends in Genetics 3: 167-171.	
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		Bensimon, et al., 1994, "Alignment and Sensitive Detection of DNA by a Moving Interface" Science 265: 2096-2098.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number	10/668,416
Filing Date	October 17, 2003
First Named Inventor	David Charles Schwartz
Group Art Unit	
Examiner Name	
Attorney Docket Number	960296.00129

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Application Number	10/668,416
Filing Date	October 17, 2003
First Named Inventor	David Charles Schwartz
Group Art Unit	
Examiner Name	
Attorney Docket Number	960296.00129

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Application Number	10/668,416
Filing Date	October 17, 2003
First Named Inventor	David Charles Schwartz
Group Art Unit	
Examiner Name	
Attorney Docket Number	960296.00129

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		Link and Olson, 1991, "Physical Map of the <i>Saccharomyces cerevisiae</i> Genome at 110-Kilobase Resolution", <i>Genetics</i> 127: 681-698.	
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		Perkins et al., 1994, "Direct Observation of Tube-like Motion of a Single Polymer Chain", <i>Science</i> 264: 819-822.	

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Sheet 6

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Application Number	10/668,416
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First Named Inventor	David Charles Schwartz
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		Poddar and Maniloff, 1986, "Chromosome Analysis by Two-Dimensional Fingerprinting", Gene 49: 93-102.	
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First Named Inventor	David Charles Schwartz
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**INFORMATION DISCLOSURE
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Sheet 1 of 9

Application Number 10/688,416
Filing Date October 17, 2003
First Named Inventor David Charles Schwartz
Art Unit
Examiner Name
Attorney Docket Number 960296.00129

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages of Relevant Figures Appear
/SKM/		US- 4,473,452	Sep., 1984	Cantor et al.	
		US- 4,695,548	Sep., 1987	Cantor et al.	
		US- 4,737,251	Apr., 1988	Carle et al.	
		US- 4,767,700	Aug., 1988	Wallace	
		US- 4,870,004	Sep., 1989	Conroy et al.	
		US- 5,059,294	Oct., 1991	Lizardi	
		US- 5,079,169	Jan., 1992	Chu et al.	
		US- 5,314,829	May, 1994	Coles	436/165
		US- 5,380,833	Jan., 1995	Urdea	
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/SKM/		FR 2605472	Apr., 1988	Alain Bouillet		
↓		WO 84/02001	May, 1984	Trustees of Columbia University		
		WO 87/01955	Sep., 1987	Washington University		

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/SKM/		Chattoraj et al., "DNA Condensation with Polyamines", J. Mol. Biol. 121, (1978), pp.327-337.	
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		Karrasch, S. et al., 1993, "Covalent Binding of Biological Samples to Solid Supports for Scanning Probe Microscopy in Buffer Solution" Biophysical J. 65: 2437-2446.	
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/SKM/		Zenhausen et al., 1992, "Imaging of DNA by Scanning Force Microscopy", J. Struct. Biol. 108: 69-73.	
		Lyubchenko et al., 1992, "Atomic Force Microscopy Imaging of Double Stranded DNA and RNA", J. Biomol. Struct. and Dyn. 10: 589-606.	
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↓		Ferrin et al., 1991, "Selective Cleavage of Human DNA: RecA-Assisted Restriction Endonuclease (RARE) Cleavage", Science 254: 1494.	

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First Named Inventor	David Charles Schwartz
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/SKM/		Campbell et al., 1991, "Generation of a nested series of interstitial deletions in yeast artificial chromosomes carrying human DNA", Proc. Natl. Acad. Sci. USA 88:5744.	
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		Filing Date	October 17, 2003
		First Named Inventor	David Charles Schwartz
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		Attorney Docket Number	960296.00129

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/SKM/		Luckham and Klein, 1984, "Forces between Mica Surfaces Bearing adsorbed Polyelectrolyte, Poly-L-lysine, in Aqueous Media", Chem. Soc. Faraday Trans. 1, 80: 865-878.	
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		Filing Date	October 17, 2003
		First Named Inventor	David Charles Schwartz
		Group Art Unit	
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Sheet 6 of 9	Attorney Docket Number	960296.00129	

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/SKM/		Romling et al., 1989, "A physical genome map of <i>Pseudomonas aeruginosa</i> ", EMBO J. 8(13): 4081-4089.	
		Smith et al., 1989, "Observation of Individual DNA Molecules Undergoing Gel Electrophoresis", Science 242: 203.	
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		Manuelidis et al., 1992, "High-resolution mapping of satellite DNA using biotin-labeled DNA probes", Biol. Abstr. 76(4), Ref. No. 27153, p. 2940.	

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		Roemling et al., "A physical genome map of <i>Pseudomonas aeruginosa</i> ", The EMBO Journal, Vol. 8, No. 13 (1989), pp. 4081-4089.	

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		Zubay, Biochemistry, 1988, pp. 918-919.	
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		Dev. et al., "Techniques for Chromosome Analysis", Techniques in Somatic Cell Genetics, edited by Shay, 1982, pp. 493-503.	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

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